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Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet **Page 1** of **10**

Complete if Known

Application Number	To be assigned
Filing Date	Herewith
First Named Inventor	Cech, Thomas R.
Group Art Unit	To Be Assigned
Examiner Name	To Be Assigned
Attorney Docket Number	015389-002990US

JC978 U.S. PTO
 10/054295
 01/16/02

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
<i>dm</i>	A	3,817,837		Tanenholtz <i>et al.</i>	08-18-74	
<i>dm</i>	B	3,850,752		Schuurs <i>et al.</i>	11-26-74	
<i>dm</i>	C	3,939,350		Kronick <i>et al.</i>	02-17-76	
<i>dm</i>	D	3,996,345		Ullman <i>et al.</i>	12-01-78	
<i>dm</i>	E	4,275,149		Litman <i>et al.</i>	08-23-81	
<i>dm</i>	F	4,277,437		Maggio	07-07-81	
<i>dm</i>	G	4,366,241		Tom <i>et al.</i>	12-28-82	
<i>dm</i>	H	4,683,195		Mullis <i>et al.</i>	07-28-87	
<i>dm</i>	I	4,683,202		Mullis	07-28-87	
<i>dm</i>	J	4,816,567		Cabilly <i>et al.</i>	03-28-89	
<i>dm</i>	K	4,965,188		Mullis <i>et al.</i>	10-23-90	
<i>dm</i>	L	5,489,508		West <i>et al.</i>	02-06-96	
<i>dm</i>	M	5,583,016		Villeponteau <i>et al.</i>	12-10-96	
<i>dm</i>	N	5,747,317		Cao	05-05-98	
<i>dm</i>	O	5,770,422		Collins	06-23-98	
<i>dm</i>	P	6,093,809		Cech, <i>et al.</i>	07/25/00	
<i>dm</i>	Q	6,258,535	B1	Villeponteau <i>et al.</i>	07-10-01	
<i>dm</i>	R	6,261,556	B1	Weinrich <i>et al.</i>	07-17-01	
<i>dm</i>	S	6,261,836	B1	Cech <i>et al.</i>	07-17-01	

FOREIGN PATENT DOCUMENTS

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		Office ³	Number ⁴	Kind Code ⁵ (if known)				
<i>dm</i>	T	JP	09154575-A			06-17-97		
<i>dm</i>	U	PCT	WO 93/23572			11/93		
<i>dm</i>	V	PCT	WO 95/13382			5/95		
<i>dm</i>	W	PCT	WO 96/01895			01-25-98		
<i>dm</i>	X	PCT	WO 96/12811			05-02-98		
<i>dm</i>	Y	PCT	WO 96/19580			06-27-98		
<i>dm</i>	Z	PCT	WO 96/40868			12-19-98		
<i>dm</i>	AA	PCT	WO 98/01542			01-15-98		
<i>dm</i>	AB	PCT	WO 98/01543			01-15-98		
<i>dm</i>	AC	PCT	WO 98/07838			03-05-98		
<i>dm</i>	AD	PCT	WO 98/08938			02-26-98		

Examiner Signature

dm

Date Considered

April 9, 04

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Substitute for form 1449B/PTO <h2 style="text-align: center;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</h2> <p style="text-align: center;">(use as many sheets as necessary)</p>		<h3 style="text-align: center;">Complete if Known</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application Number</td> <td style="width: 50%;">To be assigned</td> </tr> <tr> <td>Filing Date</td> <td>Herewith</td> </tr> <tr> <td>First Named Inventor</td> <td>Cech, Thomas R.</td> </tr> <tr> <td>Group Art Unit</td> <td>To Be Assigned</td> </tr> <tr> <td>Examiner Name</td> <td>To Be Assigned</td> </tr> <tr> <td>Attorney Docket Number</td> <td>015389-002990US</td> </tr> </table>		Application Number	To be assigned	Filing Date	Herewith	First Named Inventor	Cech, Thomas R.	Group Art Unit	To Be Assigned	Examiner Name	To Be Assigned	Attorney Docket Number	015389-002990US
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<i>dm</i>	AE	PCT	WO 98/21343			05-22-98		
<i>dm</i>	AF	PCT	WO 98/23759			06-98		
<i>dm</i>	AG	PCT	WO 98/37181			08-27-98		
<i>dm</i>	AH	PCT	WO 98/45450			10-15-98		
<i>dm</i>	AI	PCT	WO 98/59040			12-30-98		
<i>dm</i>	AJ	PCT	WO 99/01560			01-14-99		

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>dm</i>	AK	1994 Genome Issue of <i>Science</i> (265:1981f)	
<i>dm</i>	AL	Anderson and Young, "Quantitative Filter Hybridization" in <i>Nucleic Acid Hybridization</i> pp73-111 (1985)	
<i>dm</i>	AM	Ausubel <i>et al.</i> , <i>Current Protocols in Molecular Biology</i> , John Wiley & Sons, New York NY (1989)	
<i>dm</i>	AN	Autexier <i>et al.</i> , "Reconstitution of human telomerase activity and identification of a minimal functional region of the human telomerase RNA," (1996) <i>EMBO J</i> , 15:5928	
<i>dm</i>	AO	Autexier, C. et al, "Telomerase and cancer: revisiting the telomere hypothesis," <i>Trends in Biochemical Sciences</i> , 10 (21): 387-391 (1996).	
<i>dm</i>	AP	Autexier and Greider, "Functional reconstitution of wild-type and mutant <i>Tetrahymena</i> telomerase," (1994) <i>Genes Develop.</i> , 8:563	
<i>dm</i>	AQ	Avilion, A., "Characterization and expression of human telomerase," <i>Dissertation Abstracts International</i> , 56 (11) 5930-B (1996).	
<i>dm</i>	AR	Barinaga, M., "The Telomerase Picture Fills In," <i>Science</i> 276:528-529 (1997).	
<i>dm</i>	AS	Berger and Kimmel, <i>Guide to Molecular Cloning Techniques</i> , Meth. Enzymol., vol. 152, Academic Press, San Diego CA (1987)	

Examiner Signature	<i>M. A. L. L. L.</i>	Date Considered	April 9, '04
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		Examiner Name	To Be Assigned
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Sheet	Page 3	of	10

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
dsr	AT	Biessmann et al., "Addition of Telomere-Associated HeT DNA Sequences "Heals" Broken Chromosome Ends in Drosophila," Cell 61:663 (1990).	
dsr	AU	Bitter et al., "Expression and secretion vectors for yeast," Meth Enzymol., (1987) 153:516	
dsr	AV	Blackburn and Chiou, "Non-nucleosomal packaging of a tandemly repeated DNA sequence at termini of extrachromosomal DNA coding for rRNA in Tetrahymena," (1981) Proc. Natl. Acad. Sci., 78:2263	
dsr	AW	Blackburn and Gall, "A tandemly repeated sequence at the termini of the extrachromosomal ribosomal RNA genes in Tetrahymena," (1978) J. Mol. Biol., 120:33	
dsr	AX	Blackburn, "Telomerases," (1992) Ann. Rev. Biochem., 61:113	
dsr	AY	Bodnar et al., "Extension of Life-Span by Introduction of Telomerase into Normal Human Cells," (1998) Science, 279:349	
dsr	AZ	Bradford, "A Rapid and Sensitive method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding," (1976) Anal. Biochem., 72:248	
dsr	BA	Braunstein et al., "Transcriptional silencing in yeast is associated with reduced nucleosome acetylation," (1993) Genes Develop., 7:592	
dsr	BB	Calvio et al., "Identification of hnRNP P2 as TLS/FUS using electrospray mass spectrometry," (1995) RNA, 1:724	
dsr	BC	Caruthers et al., "New chemical methods for synthesizing polynucleotides," (1980) Nucleic Acids Res. Symp. Ser., 215-223	
dsr	BD	Chan and Tye, "Organization of DNA sequences and replication origins at yeast telomeres," (1983) Cell, 33:563	
dsr	BE	Colbere-Garapin et al., "A new dominant hybrid selective marker for higher eukaryotic cells," (1981) J. Mol. Biol., 150:1	
dsr	BF	Cole et al., "The EBV-hybridoma technique and its application to human lung cancer," Monoclonal Antibodies and Cancer Therapy, Alan R. Liss Inc., New York NY 77-96 (1985)	
dsr	BG	Collins et al., "Purification of Tetrahymena telomerase and cloning of genes encoding the two protein components of the enzyme," (1995) Cell, 81:877	
dsr	BH	Collins, K., "Structure and Function of Telomerase," Curr. Op. Cell. Biol. 8:374-380 (1996).	

Examiner Signature	<i>M. Arduini</i>	Date Considered	<i>April 9, '04</i>
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<i>ds</i>	BI	Conrad <i>et al.</i> , "RAP1 protein interacts with yeast telomeres in vivo: Overproduction alters telomere structure and decreases chromosome stability," (1990) <i>Cell</i> , 63:739	
<i>ds</i>	BJ	Coombs, <i>Dictionary of Biotechnology</i> , Stockton Press, New York NY (1994)	
<i>ds</i>	BK	Cote <i>et al.</i> , "Generation of human monoclonal antibodies reactive with cellular antigens," (1983) <i>Proc. Natl. Acad. Sci.</i> , 80:2026	
<i>ds</i>	BL	Counter <i>et al.</i> , "The catalytic subunit of yeast telomerase," (1997) <i>Proc. Natl. Acad. Sci.</i> , 94:9202	
<i>ds</i>	BM	Creighton, <i>Proteins, Structures and Molecular Principles</i> , WH Freeman and Co, New York NY [1983].	
<i>ds</i>	BN	Dieffenbach and Dveksler, <i>PCR Primer, a Laboratory Manual</i> , Cold Spring Harbor Press, Plainview NY (1995)	
<i>ds</i>	BO	Duplaa <i>et al.</i> , "Quantitative analysis of polymerase chain reaction products using biotinylated dUTP incorporation," (1993) <i>Anal. Biochem.</i> , 212:229	
<i>ds</i>	BP	Fang <i>et al.</i> , "Oxytricha telomere-binding protein: separable DNA-binding and dimerization domains of the α -subunit," <i>Genes Develop.</i> 7:870 (1993) and Gray <i>et al.</i> , (1991) <i>Cell</i> 67:807	
<i>ds</i>	BQ	Feng <i>et al.</i> , "The RNA Component of Human Telomerase," (1995) <i>Science</i> , 269:1236	
<i>ds</i>	BR	GenBank Accession No. AA264298	
<i>ds</i>	BS	Genbank accession no. AA299878	
<i>ds</i>	BT	Genbank accession no. AA311750	
<i>ds</i>	BU	Gilley <i>et al.</i> , "Altering specific telomerase RNA template residues affects active site function," (1995) <i>Genes Develop.</i> , 9:2214	
<i>ds</i>	BV	Gottschling and Cech, "Chromatin Structure of the Molecular Ends of Oxytricha Mononuclear DNA: Phased Nucleosomes and a Telomeric Complex," (1984) <i>Cell</i> , 38:501	
<i>ds</i>	BW	Gottschling and Zakian, "Telomere proteins: specific recognition and protection of the natural termini of Oxytricha macronuclear DNA," (1986) <i>Cell</i> 47:195	

Examiner Signature <i>ds</i>	Date Considered	April 9, '04
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Sheet **Page 5** of **10**

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<i>def</i>	BX	Grant <i>et al.</i> , Meth Enzymol., (1987) 153:516-544	
<i>def</i>	BY	Greenwood <i>et al.</i> , "Phylogenetic relationships within the class oligohymenophorea, phylum ciliophora, inferred from the complete small subunit rRNA gene sequences of <i>Colpidium campyllum</i> , <i>Glaucoma chattoni</i> , and <i>Opisthionecta henneguyi</i> ," (1991) <i>J. Mol. Evol.</i> , 3:163	
<i>def</i>	BZ	Greider and Blackburn, "A telomeric sequence in the RNA of Tetrahymena telomerase required for telomere repeat synthesis," (1989) <i>Nature</i> , 337:331	
<i>def</i>	CA	Greider and Blackburn, "Identification of a specific telomere terminal transferase activity in Tetrahymena extracts," (1985) <i>Cell</i> , 43:405	
<i>def</i>	CB	Greider, "Telomerase is processive, " (1991) <i>Mol. Cell. Biol.</i> , 11:4572	
<i>def</i>	CC	Greider, "Telomere Length Regulation," (1996) <i>Ann. Rev. Biochem.</i> , 65:337	
<i>def</i>	CD	Hampton <i>et al.</i> , <i>Serological Methods a Laboratory Manual</i> , APS Press, St Paul MN (1990)	
<i>def</i>	CE	Harrington <i>et al.</i> , "A Mammalian Telomerase-Associated Protein," (1997) <i>Science</i> , 275:973	
<i>def</i>	CF	Harrington <i>et al.</i> , "Human telomerase contains evolutionarily conserved catalytic and structural subunits," (1997) <i>Genes Dev.</i> , 11:3109	
<i>def</i>	CG	Hartman and Mulligan, "Two dominant-acting selectable markers for gene transfer studies in mammalian cells," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:8047	
<i>def</i>	CH	Henderson and Blackburn, "An overhanging 3' terminus is a conserved feature of telomeres," (1989) <i>Mol Cell. Biol.</i> , 9:345	
<i>def</i>	CI	Hillier, et al., Direct Submission to GenBank, EST Database, Accession No. W70315, Available Oct. 17, 1996.	
<i>def</i>	CJ	Horn <i>et al.</i> , "Synthesis of oligonucleotides on cellulose. Part II: design and synthetic strategy to the synthesis of 22 oligodeoxynucleotides coding for gastric inhibitory polypeptide (GIP)," (1980) <i>Nucleic Acids Res. Symp. Ser.</i> , 225-232	
<i>def</i>	CK	Hudson <i>et al.</i> , "An STS-based map of the human genome," (1995) <i>Science</i> , 270:1945	
<i>def</i>	CL	Huse <i>et al.</i> , "Generation of a large combinatorial library of the immunoglobulin repertoire in phage lambda," (1989) <i>Science</i> , 246:1275	

Examiner Signature <i>def</i>	Date Considered <i>April 9, 04</i>
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dsf	CM	Kilian <i>et al.</i> , "Isolation of a candidate human telomerase catalytic subunit gene, which reveals complex splicing patterns in different cell types," (1997) <i>Hum. Mol. Genet.</i> , 6:2011	
dsf	CN	Kipling and Cooke, "Hypervariable ultra-long telomeres in mice," (1990) <i>Nature</i> 347:400	
dsf	CO	Klobutcher <i>et al.</i> , "All gene-sized DNA molecules in four species of hypotrichs have the same terminal sequence and an unusual 3' terminus," (1981) <i>Proc. Natl. Acad. Sci.</i> , 78:3015	
dsf	CP	Koehler and Milstein, "Continuous cultures of fused cells secreting antibody of predefined specificity," (1975) <i>Nature</i> 256:495	
dsf	CQ	Kosbor <i>et al.</i> , "The production of monoclonal antibodies from human lymphocytes," (1983) <i>Immunol. Today</i> 4:72	
dsf	CR	Lamond and Sproat, (1994) "Isolation and Characterization of Ribonucleoprotein Complexes," pp103-140	
dsf	CS	Lamond <i>et al.</i> , "Probing the structure and function of U2 snRNP with antisense oligonucleotides made of 2'-OMe RNA," (1989) <i>Cell</i> , 58:383	
dsf	CT	Lendvay <i>et al.</i> , "Senescence mutants of <i>Saccharomyces cerevisiae</i> with a defect in telomere replication identify three additional EST genes," (1996) <i>Genetics</i> , 144	
dsf	CU	Lingner <i>et al.</i> , "Purification of telomerase from <i>Euplotes aedeolatus</i> : requirement of a primer 3' overhang," (1996) <i>Proc. Natl. Acad. Sci.</i> , 93:10712	
dsf	CV	Lingner <i>et al.</i> , "Reverse transcriptase motifs in the catalytic subunit of telomerase," (1997) <i>Science</i> , 276:561	
dsf	CW	Lingner <i>et al.</i> , "Telomerase RNAs of different ciliates have a common secondary structure and a permuted template," (1994) <i>Genes Develop.</i> , 8:1884	
dsf	CX	Lingner <i>et al.</i> , "Telomerase and DNA End Replication: No Longer a Lagging Strand Problem?," (1995) <i>Science</i> 269:1533	
dsf	CY	Lowy <i>et al.</i> , "Isolation of transforming DNA: Cloning the hamster apt gene," (1980) <i>Cell</i> , 22:817	
dsf	CZ	Lundblad, V. <i>et al.</i> , "RNA-dependent polymerase motifs in EST1: tentative identification of a protein component of an essential yeast telomerase," <i>Cell</i> , 60 (5):29-30 (1990).	
dsf	DA	Lustig and Petes, Identification of yeast mutants with altered telomere structure," (1986) <i>Proc. Natl. Acad. Sci.</i> , 83:1398	

Examiner Signature	<i>M. S. S. S. S.</i>	Date Considered	April 9, '04
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		Application Number	To be assigned
		Filing Date	Herewith
		First Named Inventor	Cech, Thomas R.
		Group Art Unit	To Be Assigned
		Examiner Name	To Be Assigned
		Attorney Docket Number	015389-002990US

Sheet **Page 7** of **10**

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>def</i>	DB	Lustig, A., "The Identification of Telomerase Subunits: Catalysing Telomere Research," Trends Cell. Biol. 7:299-302 (1997).	
<i>def</i>	DC	Maddox et al., "Elevated serum levels in human pregnancy of a molecule immunochemically similar to eosinophil granule major basic protein," (1983) J. Exp. Med., 158:1211	
<i>def</i>	DD	Makarov et al., "Nucleosomal Organization of Telomere-Specific Chromatin in Rat," (1993) Cell, 73:775	
<i>def</i>	DE	McEachern and Blackburn, "runaway telomere elongation caused by telomerase RNA gene mutation," (1995) Nature, 376:403	
<i>def</i>	DF	Melby et al., "Quantitative measurement of human cytokine gene expression by polymerase chain reaction," (1993) J. Immunol. Meth., 159:235	
<i>def</i>	DG	Merrifield, "Solid phase peptide synthesis. I. The synthesis of a tetrapeptide," (1963) J. Am. Chem. Soc., 85:2149	
<i>def</i>	DH	Meyerson et al., "hEST2, the Putative Human Telomerase Catalytic Subunit Gene, Is Up-Regulated in Tumor Cells and during Immortalization," (1997) Cell, 90:785	
<i>def</i>	DI	Murray, In McGraw Hill Yearbook of Science and Technology, (1992) McGraw Hill, New York NY, pp 191-196	
<i>def</i>	DJ	Nakamura et al., "Telomerase Catalytic Subunit Homologs from Fission Yeast and Human," (1997) Science, 277:955	
<i>def</i>	DK	Nakayama et al., "Cloning of a Candidate cDNA Encoding a Proteinaceous Component of Mammalian Telomerase," Mol. Biol. Cell. Abstracts Supp. 7 p. 286a, scin. 1664 (1996).	
<i>def</i>	DL	Nakayama et al., "TLP1: A Gene Encoding a Protein Component of Mammalian Telomerase Is a Novel Member of WD Repeats Family," (1997) Cell, 88:875	
<i>def</i>	DM	Nielsen et al., (1993) "Peptide nucleic acids (PNAs): Potential antisense and anti-gene agents," Anticancer Drug Des., 8:53	
<i>def</i>	DN	Oka et al., "Inverted terminal repeat sequence in the macronuclear DNA of Stylonychia pustulata, " (1980) Gene, 10:301	
<i>def</i>	DO	Olovnikov, "A theory of marginotomy: The incomplete copying of template margin in enzymic synthesis of polynucleotides and biological significance of the phenomenon," (1973) J. Theor. Biol., 41:181	
<i>def</i>	DP	Oriandi et al., "Cloning Immunoglobulin variable domains for expression by the polymerase chain reaction," (1989) Proc. Natl. Acad. Sci., 86:3833	

Examiner Signature	<i>M. A. L. L. L.</i>	Date Considered	April 9, '04
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		Group Art Unit	To Be Assigned
		Examiner Name	To Be Assigned
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Sheet	Page 8	of	10

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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dsf	DQ	Prescott, "The DNA of ciliated protozoa," (1994) <i>Microbiol. Rev.</i> , 58:233	
dsf	DR	Price, (1993) <i>Blood Rev.</i> , 7:127	
dsf	DS	Rhodes et al., "Transformation of maize by electroporation of embryos." (1995) <i>Meth. Mol. Biol.</i> , 55:121	
dsf	DT	Roberge et al., "A strategy for a convergent synthesis of N-linked glycopeptides on a solid support," (1995) <i>Science</i> , 269:202	
dsf	DU	Romero and Blackburn, "A conserved secondary structure for telomerase RNA," (1991) <i>Cell</i> , 67:343	
dsf	DV	Sambrook et al., <i>Molecular Cloning, A Laboratory Manual</i> , Cold Spring Harbor Press, Plainview NY (1989)	
dsf	DW	Sandell et al., "Transcription of yeast telomere alleviates telomere position effect without affecting chromosome stability," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12061	
dsf	DX	Sanger et al., "DNA sequencing with chain-terminating inhibitors," <i>Proc. Natl. Acad. Sci.</i> , 74:5463 [1977].	
dsf	DY	Scharf et al., "Heat stress promoters and transcription factors," (1994) <i>Result Probl. Cell Differ.</i> 20:125	
dsf	DZ	Shampay and Blackburn, "Generation of telomere-length heterogeneity in <i>Saccharomyces cerevisiae</i> ," (1988) <i>Proc. Natl. Acad. Sci.</i> , 85:534	
dsf	EA	Sheen and Levis, "Transposition of the LINE-like retrotransposon TART to <i>Drosophila</i> chromosome termini," (1994) <i>Proc. Natl. Acad. Sci.</i> , 91:12510	
dsf	EB	Singer and Gottschling, "TLC1: Template RNA Component of <i>Saccharomyces cerevisiae</i> Telomerase," (1994) <i>Science</i> 268:404	
dsf	EC	Singer, M., "Unusual Reverse Transcriptases," <i>J. Biol. Chem.</i> 270(42):24623-24626 (1995).	
dsf	ED	Starling et al., "Extensive telomere repeat arrays in mouse are hypervariable," (1990) <i>Nucleic Acids Res.</i> , 18:6881	
dsf	EE	Swanton et al., "Arrangement of Coding and Non-coding Sequences in the DNA Molecules Coding for rRNAs in <i>Oxytricha</i> sp.," (1980) <i>Chromosoma</i> 77:203	

Examiner Signature	<i>M. A. Vichon</i>	Date Considered	<i>April 9, '04</i>
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dsf	EF	Tommerup <i>et al.</i> , "Unusual chromatin in human telomeres," (1994) <i>Mol. Cell. Biol.</i> , 14:5777	
dsf	EG	Trask, "Fluorescence in situ hybridization: application in cytogenetics and gene mapping," (1991) <i>Trends Genet.</i> , 7:149	
dsf	EH	Verma <i>et al.</i> , "Human Chromosomes: A Manual of Basic Techniques," Pergamon Press, New York NY (1988)	
dsf	EI	Watson, "Origin of concatemeric T7 DNA," (1972) <i>Nature New Biol.</i> , 239:197	
dsf	EJ	Weinrich <i>et al.</i> , "Reconstitution of human telomerase with the template RNA component hTR and the catalytic protein subunit hTRT," (1997) <i>Nat. Genet.</i> , 17(4):498	
dsf	EK	Wellinger <i>et al.</i> , "Origin activation and formation of single-strand TG ₁₋₃ tails occur sequentially in late S phase on a Yeast linear plasmid," (1993) <i>Mol. Cell. Biol.</i> , 13:4057	
dsf	EL	Wellinger <i>et al.</i> , "Saccharomyces Telomeres Acquire Single-Strand TG ₁₋₃ Tails Late in S Phase," (1993) <i>Cell</i> 72:51	
dsf	EM	Whitehead Institute/MIT Center for Genome Research, Genetic Map of the Mouse, Database Release 10, April 28, 1995	
dsf	EN	Wigler <i>et al.</i> , "Transfer of purified herpes virus thymidine kinase gene to cultured mouse cells," (1977) <i>Cell</i> , 11:223	
dsf	EO	Wigler <i>et al.</i> , "Transformation of mammalian cells with an amplifiable dominant-acting gene," (1980) <i>Proc. Natl. Acad. Sci.</i> , 77:3567	
dsf	EP	Winter and Milstein, "Man-made antibodies," (1991) <i>Nature</i> , 349:293	
dsf	EQ	Wright <i>et al.</i> , "Saccharomyces telomeres assume a non-nucleosomal chromatin structure," (1992) <i>Genes Develop.</i> , 6:197	
dsf	ER	Yu <i>et al.</i> , "In vivo alteration of telomere sequences and senescence caused by mutated Tetrahymena telomerase RNAs," (1990) <i>Nature</i> , 344:126	
dsf	ES	Zahler and Prescott, "Telomere terminal transferase activity in the hypotrichous ciliate <i>Oxytricha nova</i> and a model for replication of the ends of linear DNA molecules," (1988) <i>Nucleic Acids Res.</i> , 16:6953	
dsf	ET	Zakian, "Telomeres: Beginning to Understand the End," (1995) <i>Science</i> 270:1601	

Examiner Signature	<i>dsf</i>	Date Considered	April 9, '04
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	To be assigned
		Filing Date	Herewith
		First Named Inventor	Cech, Thomas R.
		Group Art Unit	To Be Assigned
		Examiner Name	To Be Assigned
		Attorney Docket Number	015389-002990US
Sheet	Page 10 of 10		

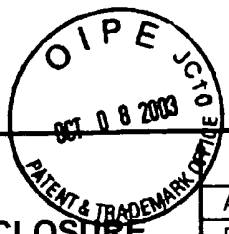
OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
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<i>dsf</i>	EU	Zaug <i>et al.</i> , "Catalysis of RNA Cleavage by a Ribozyme Derived from the Group I Intron of Anabaena Pre-tRNA ^{Leu} ,"	
<i>dsf</i>	EV	Zaug, A. J. <i>et al.</i> , "Method for determining RNA 3' ends and application to human telomerase RNA," Nucleic Acids Research, 24 (3): 532-533 (1996).	

Examiner Signature	<i>dsf</i>	Date Considered	April 9, '04
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Application Number	10/054,295
Filing Date	January 18, 2002
First Named Inventor	Cech
Art Unit	1646
Examiner Name	
Attorney Docket Number	015389-002990US

Sheet 1 of 4

U.S. PATENT DOCUMENTS+

Examiner Initials*	Cite No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
<i>MM</i>	A1	US-5,597,697	01-28-1997	Diamond	
<i>MM</i>	A2	US-5,917,025	06-29-1999	Collins	
<i>MM</i>	A3	US-5,919,656	07-06-1999	Harrington, et al.	
<i>MM</i>	A4	US-6,166,178	12-26-2000	Cech et al.	
<i>MM</i>	A5	US-6,309,867 B1	10-30-2001	Cech et al.	
<i>MM</i>	A6	US-6,337,200 B1	01-08-2002	Morin	
<i>MM</i>	A7	US-6,475,789 B1	11-05-2002	Cech et al.	
<i>MM</i>	A8	US-6,610,839 B1	08-26-2003	Cech et al.	
<i>MM</i>	A9	US-6,617,110 B1	09-09-2003	Cech et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
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Sheet 2 of 4

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Application Number	10/054,295
Filing Date	January 18, 2002
First Named Inventor	Cech
Art Unit	1646
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Attorney Docket Number	015389-002990US

NON PATENT LITERATURE DOCUMENTS

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dsf	C1	ADAMSON, D. et al. "Significant Telomere Shortening in Childhood Leukemia", <i>Cancer Genet. Cytogenet.</i> , 1992; pp. 204-206, Vol. 61	
dsf	C2	CHIU, et al. "Replicative senescence and cell immortality: the role of telomeres and telomerase (44075)", <i>Proc. Soc. Exp. Bio. Med.</i> , 1997, pp. 99-106, Vol. 214.	
dsf	C3	CHONG, L. et al. "A Human Telomeric Protein", <i>Science</i> , Dec. 1995, pp. 1663-1667, Vol. 270.	
dsf	C4	COUNTER, C. et al. "Telomerase activity in human ovarian carcinoma"; <i>Proc. Natl. Acad. Sci USA</i> ; April 1994; Vol. 91; pp. 2900-2904	
dsf	C5	COUNTER, C. et al. "Telomerase Activity in Normal Leukocytes and in Hematologic Malignancies" <i>Blood</i> ; May 1, 1995; pp. 2315-2320, Vol. 85, No. 9.	
dsf	C6	COUNTER, C. et al. "Telomere shortening associated with chromosome instability is arrested in immortal cells which express telomerase activity", <i>The EMBO Journal</i> , 1992, pp. 1921-1929, Vol. 11; No. 5, Oxford University Press.	
dsf	C7	DE LANGE, T. et al. "Structure and Variability of Human Chromosome Ends"; <i>Molecular and Cellular Biology</i> ; February 1990; pp. 518-527, Vol. 10, No. 2.	
dsf	C8	FLAVELL, R. & MATHIAS, R. "Prospects for transforming monocot crop plants", <i>Nature</i> , 12 Jan. 1984, pp. 108-109, Vol. 307.	
dsf	C9	FRESHNEY, <i>Culture of Animal Cells, A Manual Basic Technique</i> , p. 4, Alan R. Liss, Inc. New York, 1983.	
dsf	C10	Genbank Accession No. A46242; September 21, 1993	
dsf	C11	Genbank Accession No. L38903; January 30, 1995	
dsf	C12	Genbank Accession No. Q06163; November 01, 1995	
dsf	C13	Genbank Accession No. S39696; October 07, 1994	
dsf	C14	Genbank Accession No. S53396; May 5, 1995	
dsf	C15	GenBank Accession No. U95964; May 5, 1997	
dsf	C16	GLASER, P. et al. "Bacillus subtilis genome project: cloning and sequencing of the 97 kb region from 325° to 333°" <i>Molecular Microbiology</i> , 1993, pp. 371-384, Vol. 10, No. 2.	
dsf	C17	GOODMAN, R. et al. "Gene Transfer in Crop Improvement", <i>Science</i> , 3 April 1997, pp. 48-54, Vol. 236.	

Examiner
Signature

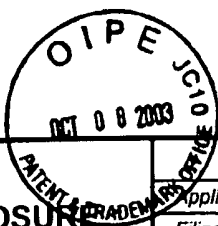
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**INFORMATION DISCLOSURE
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Sheet 3 of 4

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dsf	C18	GREIDER, C. "Telomeres, Telomerase and Senescence"; <i>BioEssays</i> ; 1990; pp. 363-369, Vol. 12, No. 8.	
dsf	C19	HARLEY, C. "Telomere loss: Mitotic clock or genetic time bomb?" <i>Mutation Research</i> ; 1991; pp. 271-282, Vol. 256, Elsevier Science Publishers.	
dsf	C20	HARLEY, C. & VILLEPONTEAU, B. "Telomeres and telomerase in aging and cancer" <i>Current Opinion in Genetics and Development</i> ; 1995, pp. 249-255, Vol. 5.	
dsf	C21	HARLEY, C. et al. "Telomeres shorten during ageing of human fibroblasts", <i>Nature</i> , 31 May 1990; pp. 458-460, Vol. 345.	
dsf	C22	HASTIE, N. et al. "Telomere reduction in human colorectal carcinoma and with ageing", <i>Nature</i> , 30 August 1990, pp. 866-868, Vol. 346.	
dsf	C23	HEALY, K. C. "Telomere dynamics and telomerase activation in tumor progression: prospects for prognosis and therapy" <i>Oncol. Res.</i> , 1995, pp. 121-130, Vol. 7	
dsf	C24	HENDERSON, C. Cancer genetics gene regulates telomerase resulting in death of cancer cells; <i>Gene Therapy Weekly</i> ; 11 September 1995.	
dsf	C25	HIYAMA, E. et al. "Correlating telomerase activity levels with human neuroblastoma outcomes"; <i>Nature Medicine</i> ; 3 March 1995; pp. 249-255, Vol. 1, No. 3.	
dsf	C26	HOLTZMANN, K. et al. "Telomeric Associations and Loss of Telomeric DNA Repeats in Renal Tumors", <i>Genes, Chromosomes & Cancer</i> , 1993, pp. 178-181, Vol. 6.	
dsf	C27	JÄHNE, A. et al. "Genetic Engineering of Cereal Crop Plants: A Review", <i>Euphytica</i> , 1995, pp. 35-44, Vol. 85, Kluwer Academic Publishers, Netherlands.	
dsf	C28	JOHNSON, P. et al., "Expression of Wild-Type p53 Is Not Compatible with Continued Growth of p53-Negative Tumor Cells", <i>Molecular and Cellular Biology</i> , Jan. 1991, p. 1-11, Vol. 11, No. 1.	
dsf	C29	JOLLIFFE, L.K. "Humanized antibodies: enhancing therapeutic utility through antibody engineering", <i>Int. Rev. Immunol.</i> , 1993, pp. 241-250, Vol. 10	
dsf	C30	KIM, N. et al. "Specific Association of Human Telomerase Activity with Immortal Cells and Cancer", <i>Science</i> , 23 December 1994, pp. 2011-2014, Vol. 266.	
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dsf	C32	LEWIS, A. & CROWE, J.S. "Generation of humanized monoclonal antibodies by 'best fit' framework selection and recombinant polymerase chain reaction", <i>Year Immunol.</i> , 1993, pp. 110-118, Vol. 7	
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dsf	C34	MALICKI, J. et al. "A human <i>HOX4B</i> regulatory element provides head-specific expression in <i>Drosophila</i> embryos", <i>Nature</i> , 23 July 1992, pp. 345-357, Vol. 358.	

Examiner Signature	<i>dsf</i>	Date Considered	April 9, '04
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08B (08-03)

Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 4 of 4

Complete if Known

Application Number	10/054,295
Filing Date	January 18, 2002
First Named Inventor	Cech
Art Unit	1646
Examiner Name	
Attorney Docket Number	015389-002990US

NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
dsf	C35	NATARAJAN et al. "Major histocompatibility complex determinants select T-cell receptor alpha chain variable region dominance in a peptide-specific response." <i>Proc. Natl. Acad. Sci.</i> , Oct 1992, pp. 8874- 8878, Vol. 19.	
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dsf	C41	SCHWARTZ, H. et al. "Telomere Reduction in Giant Cell Tumor of Bone and with Aging"; <i>Cancer Genet Cytogenet</i> ; 1993; pp. 132-138, Vol. 71, Elsevier Science Publishing Co., Inc., New York, U.S.A.	
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dsf	C43	TAIT, J. et al. "Structure and Polymorphisms of the Human Annexin III (ANX3) Gene", <i>Genomics</i> , 1993, pp. 79-86, Vol. 18, No. 1	
dsf	C44	WINTER, G. & HARRIS, W. "Humanized Antibodies", <i>Trends Pharmacol. Sci.</i> , May 1993, pp. 139- 143, Vol. 14.	
dsf	C45	WIRTH, URS et al; "Immediate-Early RNA 2.9 and Early RNA 2.6 of Bovine Herpesvirus 1 Are 3' Coterminal and Encode of Putative Zinc Finger Transactivator Protein"; <i>Journal of Virology</i> ; May 1992; pp. 2763-2772, Vol. 66, No. 5.	

Examiner
Signature

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Date
Considered

April 9, '04

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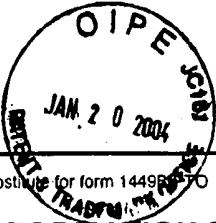
Substitute for form 1449A INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known	
		Application Number	10/054,295
		Filing Date	January 18, 2002
		First Named Inventor	Thomas R. Cech
		Art Unit	1652
Examiner Name	Malgorata A. Walicka		
Attorney Docket Number	015389-002990US		
Sheet	1	of	2

U.S. PATENT DOCUMENTS+					
Examiner Initials*	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
<i>Mal</i>	A1	US-6,440,735 B1	08-27-2002	Gaeta	
<i>Mal</i>	A2	US-6,444,650 B1	09-03-2003	Cech et al.	
<i>Mal</i>	A3	US-6,517,834 B1	02-11-2003	Weinrich et al.	
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<i>Mal</i>	A6	US 2002-0164786 A1	11-07-2002	Cech et al.	
<i>Mal</i>	A7	US 2002-0187471 A1	12-12-2002	Cech et al.	
<i>Mal</i>	A8	US 2003-0009019 A1	01-09-2003	Cech et al.	
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<i>Mal</i>	A10	US 2003-0059787 A1	03-27-2003	Cech et al.	
<i>Mal</i>	A11	US 2003-0096344 A1	05-22-2003	Cech et al.	
<i>Mal</i>	A12	US 2003-0100093 A1	05-29-2003	Cech et al.	
<i>Mal</i>	A13	U.S. Application No. 09/432,503		Cech et al.	
<i>Mal</i>	A14	U.S. Application No. 09/721,477 ✓		Cech et al.	
<i>Mal</i>	A15	U.S. Application No. 09/721,506 ✓		Cech et al.	
<i>Mal</i>	A16	U.S. Application No. 09/974,564		Cech et al.	<i>irrelevant</i>

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				
<i>Mal</i>	B1	CA	2271718	A1	05-22-1998			<input type="checkbox"/>
	B2							<input type="checkbox"/>

Examiner Signature	<i>Malicka</i>	Date Considered	<i>April 9, 2004</i>
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/054,295		
		Filing Date	January 18, 2002		
		First Named Inventor	Thomas Cech		
		Art Unit	1652		
		Examiner Name	Malgorata A. Walicka		
Sheet	2	of	2	Attorney Docket Number	015389-002990US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C1	ADAMS, MARK et al. "Initial Assessment of Human Gene Diversity and Expression Patterns Based Upon 83 Million Nucleotides of cDNA Sequence" <i>The Genome Directory: Supplement to Nature</i> 28 September 1995, 1995, pp. 3-174, Vol. 377, Issue 6547S.	
	C2		

Examiner Signature		Date Considered	
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